Crile (G. W.)

LARYNGECTOMY

IN A CASE OF

CANCER OF THE LARYNX,

—BY—

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REPORT OF A CASE OF CANCER OF THE LARYNX—LARYNGECTOMY—RECOVERY FROM OPERATION—DEATH FROM RECURRENCE IN TWO AND ONE-HALF MONTHS.

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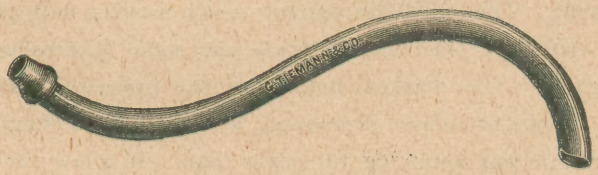
A few weeks previous to the laryngectomy tracheotomy was made, Dr. Baker operating and I assisting. The patient was anæsthetized, chloroform being used at the time of the tracheotomy; respiration required the aid of the extraordinary respiratory muscles; the anæsthetic having abolished the action of these, suffocation was imminent. However, by bold and rapid incisions the trachea was quickly opened and the tube inserted. There was considerable difficulty in accomplishing this, as the trachea was unusually deeply seated in the neck. Sutures were passed through the margins of the tracheal rings and anchored to the integument. By this manœuver the tracheal opening could be well controlled.

We had a number of tracheal tubes of various sizes and shapes, but not one was long enough to reach, and remain in the trachea. Special tubes were telegraphed for, one of which answered the purpose well. This tube the patient is still wearing with great comfort. After the tracheotomy there was some improvement in his condition. The marked lividity of the preceding days passed away. Some bronchitis developed, a considerable cough and expectoration was annoying for some time. In a few weeks he left the hospital for his home in Newburgh, feeling quite well, with the exception of some cough and difficulty in swallowing. The radical operation was proposed about this time, but as no very urgent symptoms were present, it was declined by the patient and his friends.

About two months later swallowing became so difficult that an operation was welcomed. July 5, he re-entered University Hospital for immediate operation, but a constant fever, harassing and unremitting, coughing, bronchial rales over both sides of the chest, were sufficient to cause delay. It was discovered about this time that when milk was taken part of it reappeared at the tracheal tube, a like phenomenon in the case of Frederick III, caused diagnosis of œsophageal fistula. After an unsuccessful week of treatment of the lung complication we concluded that the exciting cause was the detritus escaping into the lungs from the ulcerating laryngeal growth, and that the morbid growth, together with the food escaping into the trachea and bronchi, was the exciting cause of the cough, and consequently that further delay was useless.

The indications for the operations rested upon the diagnosis of a malignant growth in the larynx and the consent of the patient after the probable results had been fully laid before him.

The preliminary preparation consisted in enveloping the chest in an oiled silk jacket; the administration of digitalis and strophanthus, together with Murdock's food and eggnogs, the surgical preparation of the field of operation and the arrangement of an apparatus for administering the anæsthetic. Twenty minutes before the operation $\frac{1}{4}$ morph. $\frac{1}{150}$ atropia. was given hypodermically. Chloroform was administered by Dr. W. E. Lower so skillfully that not once did the patient emerge from the third stage of narcosis, neither was the narcosis at any time dangerously deep.



A tin tube eight inches long reduced to the exact diameter of the tracheal tube and bent to its curve was substituted for the tracheal tube. To the distal end was attached the rubber tube and inhaler of a Trendlinberg tampon canula, taking the management of the inhalations at a safe distance from the field of operation.

The operating table was well inclined, the head of the patient placed on the lower end, held well up by an assistant. Owing to the shortness and thickness of the neck, a median incision from the hyoid bone to the lower border of the cricoid was made, and lateral incisions were carried along the upper margins of the hyoid bone. There being a marked depression at the entrance of the tracheal tube a seminuar incision was made about an inch above it, the skin deflected, the margins carried around the tube so as to form a barrier against the entrance of blood through the tracheal opening, at the same time giving free exposure to the inferior portion of the larynx.

The larynx was exposed in the median line with the scalpel, which was not used again in the operation. By means of a modified periostiome the soft parts were removed from each side, the larynx being held by a bullet forceps well fastened to the anterior surface of the cartilage.

I next split open the larynx with a pair of bone pliers, the box having been found well ossified, and the interior inspected to determine to what extent the operation would be necessary. It was at once evident that total extirpation was necessary. A stout hooked forceps having been fastened to the pomum adami, the soft parts of the sides of the thyroid were detached, then the soft parts of the sides and the entire posterior surface of the cricoid were detached likewise.

Following this the trachea was severed with scissors while being supported on the periostiome. The hæmorrhage was insignificant, a few snips with scissors severed the thyro-hyoid muscles, the thyro-epiglotidean ligament, and the remaining soft parts.

The only hæmorrhage of any moment was encountered when the larynx was split open, the morbid growth was lacerated, causing hæmorrhage in the interior of the larynx. This was easily arrested by gauze tamponing. The wound was packed with antiseptic gauze, a

stomach tube passed into the œsophagus through the wound. The opening into the severed trachea was closed with a gauze tampon and the patient placed in bed. Not a ligature or suture was used. The time occupied in the operation was 47 minutes. The amount of blood lost was insignificant.

The patient bore the operation very well, there being no apparent shock. He slept quietly most of the day and the following night was equally restful. In the evening a little water was given through the œsophageal tube. The following day peptonized milk and Valentine's beef juice were given in a similar manner.

In the evening the œsophageal tube was removed and I was happily surprised to find that he could swallow without much difficulty. Since then he has been able to swallow any kind of food with little if any difficulty.

His pulse never reached 100, the wound repaired rapidly and during the past two weeks has been getting about his room. At present the wound is almost healed, there being a small space in the upper and the lower ends of the wound kept open for the adjustment of the artificial larynx. He has been allowed a generous diet of nutritious food, the wound has been dressed usually twice daily, and he has been given tonics.

Since the operation his general condition has very much improved, his lungs have cleared up, and the suppurative, bronchitis, pain and dysphagia disappeared, the harassing cough tormenting him night and day and resisting every attempt at relief has not been heard since the operation, leaving no reasonable doubt as to its origin in the larynx. The broncho-pneumonia no doubt was due to the presence in the broncho-pulmonary tract of the products of the ulcerating growth in the larynx.

Notwithstanding the great danger of pneumonia following operations on the larynx and trachea, even in the absence of a light attack, the operation had a most favorable effect upon the lungs, inasmuch as it removed the exciting cause. Having concluded this to be the cause, the operation was ventured on the otherwise very pangerous condition.

I developed the technique by frequent operations on dogs—the operation I found to be analagous in dogs—the comparative anatomy being very similar. From my experience in this case I can not too strongly recommend preliminary tracheotomy, the use of the tin tube in the administration of the anæsthetic, and the modified periostiome and forceps for the removal of the larynx, making the operation almost bloodless.

A SUPPLEMENTAL REPORT OF DR. CRILE'S CASE OF LARYNGECTOMY.

BY ALBERT R. BAKER, M. D., CLEVELAND, O.

At the request of Dr. Crile, I make this supplementary report, as it is, so far as I have been able to learn, the only total extirpation of the larynx ever made by a Cleveland surgeon. I only know of one other in the State, and that was reported some time since by Dr. Max Thorner, of Cincinnati. His patient died on the fifth day.

Mr. Geo. Jockens, age fifty-six, German, brick-maker, consulted me early in March, 1892, for loss of voice, pain and difficulty in swallowing. He gave a history of having had occasional attacks of hoarseness and coughing for more than a year, but did not stop work until September, 1891, when he commenced having pain in the throat and side of head, voice became husky, and suffered from attacks of coughing and dyspnœa. General appearance good, well nourished, no cachexia, talked in a hoarse whisper. Laryngoscopic examination, which was made with great difficulty, revealed a large growth involving almost the entire right side of the larynx, diagnosed laryngeal tumor, probably malignant in character. Large doses of iodide of potash were given for five or six weeks without benefit. In the meantime a portion of the tumor was removed and its malignant character confirmed by a microscopic examination.

Until the later part of April the left side of the larynx did not

seem to be involved in the disease. The movements of the cord on that side were not much impaired, and respiration was not greatly interfered with except at intervals, most frequently at night. About the first of May there seemed to be a rapid increase in the size of the growth in the right side and the left side because inflamed, and respiration greatly impeded. I urged the necessity of tracheotomy to prevent impending death from laryngeal obstruction. As the symptoms became more alarming, the patient finally consented and the operation was performed May 10th.

Dr. Crile mentioned some of the difficulties met with in making the tracheotomy. Although I have had considerable experience in performing this operation, I must confess that I never fully realized the truthfulness of the statement of Dr. Gross in his classical work on "Foreign Bodies in the Air Passages," who says, "I know hardly an operation in all surgery that I would not rather undertake under certain circumstances. The amputation of a limb, the extirpation of a glandular tumor, lithotomy and even the perineal section are trifling matters in comparison with tracheotomy in a short, thick-necked child." This patient had a very thick neck, the upper ring of the trachea being on a level with the sternum, and situated more than two inches beneath the integument. It was almost impossible to reach the trachea without pulling it forcibly upwards and forwards, and no ordinary tracheotomy tube could be retained, so we had to have one especially made about twice the usual length. The patient made rather a rapid recovery and returned to his home in three weeks, and was more comfortable than for some months previous. He declined at this time to have a total extirpation of the larynx made, which was strongly urged.

About the first of July it became impossible for him to swallow solid food; an obstinate cough developed with considerable elevation of temperature. On July 5th he returned to University Hospital for operation.

After the operation the temperature immediately went down, pain disappeared, solid food as well as fluid could be taken with comfort. Only one who has seen the change of expression from that of the great-

est distress, pain and suffering, depicted upon the countenance of a child suffering from membranous croup, relieved by a timely tracheotomy or intubation, can fully appreciate the relief expressed in the countenance of this patient after the removal of the larynx. He ate well, slept well, suffered no pain, regained his strength, and everything progressed favorably for about four weeks ; then he began to complain of pain in left side of neck, extending to ear and side of head, an enlargement, very painful to the touch, appeared in the left sub-maxillary region. It was hoped at first that this might prove inflammatory in nature, but before long our worst fears were realized and we were obliged to confess that it was a return of the malignant growth which pursued its usual course until death resulted, September 26th, two months and a half after the laryngectomy.

The following report by Dr. Preble leaves no doubt as to the nature of the disease:

October 27, 1892.

Dear Doctor: The extirpated larynx examined at the request of yourself and Dr. Crile was found to be the seat of a rapidly-growing epithelioma. I made a number of sections from various parts of the mass which lined the cartilages, using both the razor and microtome, and stained them with lithium-carmine. The sections were invariably those of a malignant epithelioma, and consisted of a fibrous stroma, studded with numerous nests of epithelial tissue. The epithelia were of colossal size, and preserved the semblance of a concentric arrangement within the nest ; but, in no instance, did I observe any trace of the horny metamorphosis which often occurs within the centre of the nest. This omission I believe to be due to the very active growth of the mass.

Yours sincerely,

DR. A. R. BAKER. EDWARD PREBLE.

A few weeks after the operation a modified Fowler's artificial larynx was inserted, which answered the purpose fairly well for a time, but owing to the rapid growth of recurring tumor, the pharyngeal portion of the artificial larynx caused considerable discomfort, and toward the last the patient preferred to use simply the tracheal tube.

From my observation of the case and from reading the literature on this subject, which is rapidly becoming voluminous, I believe

that under certain conditions the operation is a justifiable one, and ought to be performed more frequently.

Although the number of reported cases in which a permanent cure has been effected is comparatively small, enough have recovered to let us hope that better results will be attained in the future. In a private letter received from Dr. Roswell Park, he informs me that his case lived seven years after the operation. Several cases even more favorable than this have been reported. While a large percentage of the cases operated upon have died from the operation itself, I believe, that with our improved methods of operation, these may mostly be prevented. The technique, as developed and performed by Dr. Crile in this case, makes it not such a formidable operation as one would suppose. Severer operations are being performed every day, and while the danger of recurrence cannot be prevented in this any more than in malignant diseases of other organs, early diagnosis and prompt removal will undoubtedly be followed by a higher percentage of recoveries.